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# THE MANHATTAN SALT MINE,

GODERICH, ONT., 2-52

The Property of H. Y. Attrill, of New York and Goderich.

*The importance of its early completion to the Commercial,  
Manufacturing and Shipping Interests of the Dominion.*

## Salt and its Uses.

There are probably but few among all who are daily in the habit of using salt realize the extent or importance of the trade in this article. It is used in the manufacture of glass, and of soap; out of it principally are made by varying processes, bleaching powder and baking powder; sulphuric acid is another article for the production of which salt would the more readily be used if obtainable cheaply enough, instead of sulphur fumes. There are still other uses in metallurgy and the arts, which are readily found for this product.

The salt industry in Canada is as yet but a limited one, in its infancy really, when we consider what an enormous field we have of saliferous strata in the counties of Huron, Bruce and Lambton. Salt, in hundred millions of tons, and of the purest quality, is there indicated. Much has been done by the evaporating process, it is true, and Canadian salt is now an article of current home use. But the plan proposed by Mr. Attrill, as stated elsewhere by a correspondent, is to mine the rock salt as coal is mined, to crush it by proper machinery into coarse or fine, as consumers require. The gentleman named suspended operations last year, for reasons which we have stated; but it appears he has by no means lost sight of the object for which he made such thorough explorations.

The remarkable advantageous geographical position of Goderich would make it the natural source of supply for the great cities of the lake basins—Chicago alone using over 100,000 tons of salt a year—and of the great farming and grazing lands of the far west, and the no inconsiderable market of the metallurgical works in the Rocky Mountains and on Lake Superior.

Deposits of rock salt have recently been discovered in New York State, and we see it stated that this same Mr. Attrill is being urged to transfer his interests to the southern side of the lakes. Now, it will be apparent enough that, should he do this, abandon his Goderich scheme, and establish mines and chemical works on the American side, he would thereby pretty effectually prevent the present full development of the Goderich bed, and throw back this important Canadian industry for a long period.

If mines were opened at Goderich with a capacity of 2,000 tons a day, and chemical works established in their vicinity, there would be little occasion for the investments for years to come, of the large sums necessary to build rival works elsewhere; and, indeed, there are few individuals who have the means, and fewer still who are willing to expend so much of their capital in enterprises of this kind. \$100,000 would not be deemed an excessive sum to invest in the real estate necessary to justify the expenditure

of \$200,000 or \$250,000 in opening and equipping a mine and the necessary surface works. A large additional amount might be required in carrying on the business as a working capital. These are sums so considerable that gentlemen even as wealthy as Mr. Attrill may well hesitate before finally embarking in an enterprise requiring them. That their investment and the industry this would give birth to would be of very great benefit not only to Goderich and to the entire Dominion, must be evident to every one even slightly familiar with the thousand ways in which the working of a mine or of chemical works necessitates the occupation and contributes to the support of many times the number of persons directly connected with the main enterprise.

British North America imported from Liverpool in the first seven months of this year about 50,000 tons of salt, while the United States imported in the same time from the same port 110,000 tons, while the total exports from the Mersey for the seven months amounted to about 570,000 tons. The value of this salt f. o. b. was from 11s. to 13s. per ton, and the freights to American ports, exceedingly low at present, vary from 2s. 6d. to 5s. a ton. The freights to the great markets of the West were of course much higher. It is desirable for Canadians to perceive the importance of this industry, or at least the importance of establishing it before that is done on the other side of the lakes. Our American friends are by no means slow in developing "a bonanza" when they find one; and as our deposit is already tested, and is probably much the larger, we should bestir ourselves to encourage the salt works lest we be outdone by our enterprising neighbors. Work, largely experimental, having for its object greatly to reduce the cost of the production of salt, would seem to deserve some special encouragement.

### The Attrill Salt Enterprise.

(From the Monetary Times, Sept. 6, 1878.)

Office Engineering and Mining Journal, New York, Aug. 28th, 1878.

To the Editor Monetary Times.

SIR,—On my return from Europe, where I accompanied Mr. Attrill, with the object of examining into economic questions connected with the sinking of his salt shaft at Goderich, Ont., I have had my attention called to an article entitled "The Attrill Salt Enterprise," which appeared in your columns on the 5th July. As the enterprise, from its great magnitude—incalculable importance to Canada—should be of interest to your readers, I venture to correct a few errors that have crept into your report.

Mr. Attrill's test borings were made with the diamond, not as your report says by "ordinary drill," and then brought up "test cores," showing the nature of the rocks passed through to a depth of over 1,500 feet. A number of these cores are now on exhibit in the Canadian department at the Paris Exposition, and have attracted great attention, more particularly on account of the remarkable purity of the rock salt found, and the number and thickness (aggregating 126 feet) of the beds in which this precious mineral occurs.

It is quite true that the enterprise has been an exceedingly expensive one, and Mr. Attrill has laid the ground work of a great industry on well made foundations. After the thorough exploration, which a prudent investor should always make in such cases, plans were elaborated for sinking a large shaft; and the finest machinery that could be found in this country was procured and placed in substantial buildings of the most permanent

character. It was known that large quantities of water would be met with in sinking, and the plans of Mr. Attrill's then chief engineer provided for this by purchasing heavy pumping engines and cast-iron tubing, which, as the shaft was sunk, was to be used to line it and prevent the influx of water. The heaviest water, or the "big spring," as it is locally termed, was expected at a depth of about 300 feet, but no inconsiderable amount was met with from the surface down; indeed, it is more than probable that the water from the lake, which is some four hundred feet distant, found its way through the gravel in which the first sixty-five feet of the shaft were sunk before solid rock was reached. After lining up the portion of the shaft with a heavy brick wall, the sinking was carried through rock to its present depth. More water than had been expected was met before attaining this depth, some 600 gallons a minute having to be pumped. Though this is unquestionably a large amount of water from a sinking 12½ feet in diameter, it is not so great as to make it impossible to continue the work; it was, however, quite sufficient to make the progress exceedingly slow and the work very expensive. It was then, for several reasons, decided to stop operations and review the information already had concerning the expense of sinking by the Belgian, or *Kind-Chaudron* system, in which the shaft is drilled out by gigantic drills, and a tight cast-iron lining is sunk from the surface till it passes the water-bearing beds, when a tight joint is made with the rocks and the water in the shaft is pumped out.

This process, so simple in design, is very slow and exceedingly costly. Mr. Attrill is not to be deterred by any ordinary expense in his undertakings; but before investing so large an amount as this calls for, it was deemed prudent to consider the effect of recent discoveries of rock salt in the State of New York upon the future markets for his products. The matter stands here at the present time.

Since my connection with this enterprise my opportunity for becoming acquainted with the salt industry of both this country and Europe has given me much information upon the subject, and a few words concerning the importance of this enterprise to the Dominion may not be amiss. In this country where, owing to its high price, salt has not yet found any extended use in manufacturing, except in making soap and glass, the consumption amounts to about 50 pounds annually per head of inhabitants, or, including Canada, a total of nearly one million tons a year. Were such magnificent deposits as that at Goderich worked on a large and economical scale, the consumption of its cheap product in the soda and other chemical manufactories would add an enormous amount to even these large figures. The Attrill shaft is designed and provided with the necessary machinery to raise 100 tons an hour from the depths of 1,100 to 1,200 feet; or say 1,000 tons in the usual working day, though in mine work it is possible to work both night and day. What would be the value to the Dominion, and more particularly to the town of Goderich and its vicinity, of the annual product of even two or three hundred thousand tons of salt? The expenditure for labor and materials used would amount to fully one dollar a ton on the salt produced, while the handling and transportation of this product, whether by land or water, would bring a further very important sum into the country. If chemical works were established at Goderich for the purpose of manufacturing soda in its different forms, bleaching powder, &c., &c., the value of the Goderich Salt Mines to the Dominion, and more particularly to the town itself, would have to be measured by millions of dollars annually and they would give steady and remunerative employment, directly or indirectly, to thousands of persons. The Dominion has at the present time no enterprise as beneficial to its citizens, and as important in its bearings, as would be the establishment of this salt industry on a large scale, such as Mr. Attrill proposed.



The importance of this enterprise to the Dominion must be my justification for occupying so much of your valuable space.

Very respectfully,

RICHARD P. ROTHWELL, Mining Engineer.

### **The Manhattan Shaft.**

*(From the Huron Signal, Nov. 27, 1878.)*

The Manhattan Salt Works situated in Colborne township opposite Goderich have already cost a large sum of money. It will require a very large outlay and the labour of a great many men to complete them. We are informed that Mr. Attrill is here just now, which fact has no doubt suggested a correspondent to send us a few lines anent the propriety of giving a tangible expression to the value the people of Goderich and Colborne place upon the completion of these works. There is no doubt that any bonus which may be urged as proper to give in aid of these works would not be considered as really necessary to enable the proprietor to continue them. We would look upon the aid so given as a practical manner of exhibiting to the enterprising proprietor our sympathy and appreciation of his efforts in developing the hidden mine of wealth which underlies Goderich and vicinity. It might be well for Colborne township and Goderich town and township, as they are immediately connected, to consider the suggestion our correspondent throws out. We would like to see the subject taken up and discussed. If a bonus such as could be afforded, would ensure the completion of such a prodigious enterprise, and such completion can be shown as of immense pecuniary advantage to the sections we have named, there ought to be no difficulty in having it granted. One thing about this is that the proprietor, if once fully resolved to put it through, is of sufficient financial strength to do so. Any aid given would be as encouragement, not as assistance. There would be no hanging fire if the proprietor could be induced to go on. It is always well to deal with responsible persons; any guarantee given can then be relied on.

### **Manhattan Salt Mine.**

*(From the Huron Signal, Dec. 25, 1878.)*

There is a self-satisfiedness about mankind which it were well we did not possess. We are too prone to cast upon chance, circumstances or some other intangible nothingness the blame which, very often, we should place upon our own shoulders. This applies to humanity generally. And we are free to say that the people of Goderich have indubitable claims to being as natural as human nature. Here are we floundering in the ruts of forty years ago regardless of the munificent provision an allwise Providence has made for us. Unfortunately for Goderich its early inhabitants were not of that class who had the clearheadedness to perceive the commercial advantages the place really possessed; so that when we had the trade of the whole of the counties of Huron, Perth, Bruce and part of Middlesex—Goderich listlessly allowed people to come and go. No attempt was made to centralize trade here by industrial manufactures. We bought, sold and exchanged; but we created nothing. Gradually inland towns arose to supply the wants we had been ministering to, and we are left, if not to mourn our decadence, to at least look upon our immobility with indifference. Of late years a very important discovery of natural wealth has been found under our town and

vicinity. We allude to the deposits of salt. Many of our citizens embarked their means in striving to develop this buried treasure. For a time all went well, mechanics, teamsters, laborers, farmers, landlords, merchants, all gloried in the good times, and better coming. Unfortunately for the town the salt deposits were not confined to Goderich, over production resulted and ruin engulfed some of our most enterprising citizens.

We have yet the salt beds which are a mine of incalculable value if the proper mode of working them is only adopted. Literally speaking, salt is of universal use. In the reducing of various ores such as copper, etc., it is much used. The *Monetary Times* says:—"It is used in the manufacture of glass, and soap; bleaching and baking powders; sulphuric acid, etc. There are still other uses in metallurgy and the arts, which are readily found for this product." The *Times*, editorially says further:—"The remarkable advantageous position of Goderich would make it the centre of supply for the great cities of the lakes—Chicago alone using over 100,000 tons of salt a year—and of the great farming and grazing lands of the far west, and the no inconsiderable market of the metallurgical works in the Rocky Mountains and on Lake Superior."

Now, the living question for the people of Goderich to take up is, shall we like men do all in our power to supply this market, this demand, or shall we, like ingrates, throw back upon a beneficent Providence the means to enrich ourselves which have been placed within our reach? Old Gradgrind may come forward and say "oi doant want any more riches and oill keep what ois got." But we do not think Goderich has many Gradgrinds. Unfortunately for us the United States is our principal market. And now it has been proven that there are *rock* salt beds in New York State. They can be reached less expensively than the Goderich salt beds can. Our enterprising Mr. Attrill is negotiating with a company for the removal of his plant from Goderich to New York State to be there used. We shall be very sorry to see Mr. Attrill abandon his mine on the opposite side of the harbor. The capital necessary to open and equip the mine would be about \$250,000. An additional sum will be required for working capital to carry on the business. Now, if we are correctly informed, this outlay might be retained here if intelligent efforts are put forth by our people. It is not the object of this article to say what those efforts shall be; but we should be direlict in our duty did we not point out the magnitude of the loss that is in prospect for us if we are not up and doing.

From the best mining authority in the United States we glean the information that Mr. Attrill is provided with the machinery to raise 100 tons of salt per hour from a depth of 1,200 feet; or say 1,000 tons in the usual working day.—It is calculated that the cost expended for labor and material used, would be one dollar per ton. This would make a *daily* outlay in and around Goderich of at least \$1,000. Should it be possible to work night as well as day, of course a double expenditure would be entailed. Then there are many industries incidental to the salt business which would very naturally take root here.

We again repeat that if any steps can be taken to further the securing of the outlay here named, it were well to take them. It needs no sophistical pleading to show the benefits of an enterprise like the Attrill mine; we have given figures which may be relied on. If these benefits are worth having, they are worth paying for. The problem then to be solved would be, how much would we have to pay? Let us look at the matter in a business light and find out whether we cannot afford to make an investment which shall redound to the enrichment of our citizens and the progress of the whole country. We will be glad to have the views of ratepayers in this matter.

## STATEMENT:

Shewing the Quantity and Value of Salt  
Imported at Canadian Ports During  
the Year 1877.

## IMPORTS.

From What Country.			From What Country.		
ONTARIO.			MANITOBA.		
	Bush.	Value.		Bush.	Value.
Great Britain.....	4,734	\$1,041	Great Britain.....	24	\$ 5
United States.....	33,751	6,460	United States.....	017	552
Total for Ontario.....	38,485	\$7,501	Total for Manitoba.....	641	\$557
QUEBEC.			BRITISH COLUMBIA.		
	Bush.	Value.		Bush.	Value.
Great Britain.....	1,106,926	\$117,536	Great Britain.....	22,456	\$3,093
United States.....	26,064	4,423	United States.....	6,818	2,643
Spain.....	28,170	2,918	Sandwich Islands.....	2,500	525
Portugal.....	16,450	891			
British West Indies.....	34,622	3,305	Total for British Columbia.	31,774	\$6,861
South America.....	10,359	932			
Total for Quebec.....	1,222,591	\$150,025			
NOVA SCOTIA.			PRINCE EDWARD ISLAND.		
	Bush.	Value.		Bush.	Value.
Great Britain.....	280,512	\$ 23,817	Great Britain.....	170,469	11,743
United States.....	16,844	3,686	United States.....	10,034	642
Spain.....	63,417	5,334	British West Indies.....	3,787	302
Portugal.....	84,928	5,968	St. Pierre et Miquelon.....	550	160
British West Indies.....	318,462	31,434	Total for P. E. Island.....	185,740	\$12,847
Spanish West Indies.....	71,155	4,608			
French West Indies.....	181,635	19,085			
Dutch West Indies.....	32,629	3,377			
St. Pierre et Miquelon.....	700	200			
British Guiana.....	1,753	175			
Newfoundland.....	27,484	4,272			
Total for Nova Scotia.....	1,088,509	\$106,906			
NEW BRUNSWICK.			DOMINION OF CANADA.		
	Bush.	Value.		Bush.	Value.
Great Britain.....	518,289	\$59,917	Great Britain.....	2,112,410	\$242,772
United States.....	5,364	2,263	United States.....	100,592	20,619
Portugal.....	4,020	172	Spain.....	91,587	8,252
British West Indies.....	1,686	160	Portugal.....	105,404	7,031
Dutch West Indies.....	2,850	283	British West Indies.....	358,647	\$5,201
Total for New Brunswick...	532,215	\$62,795	Spanish West Indies.....	71,155	4,608
			French West Indies.....	181,635	19,085
			Dutch West Indies.....	35,479	3,669
			British Guiana.....	1,753	175
			Newfoundland.....	27,484	4,272
			St. Pierre et Miquelon.....	1,250	360
			Sandwich Islands.....	2,500	525
			South America.....	10,359	932
			Total for Dominion.....	3,099,955	\$347,492

## STATEMENT :

Shewing the Quantity and Value of Salt  
Exported at Canadian Ports During  
the Year 1877.

## EXPORTS.

Value.

\$ 5  
552  
\$557

## To What Country.

## ONTARIO.

Bush. Value.

United States, Canadian.....	785,973	\$ 81,443
" " Not Canadian	41,059	12,525
Total from Ontario.....	826,032	\$93,968

Value.

\$3,693  
2,643  
525  
\$6,861

## QUEBEC.

Bush. Value.

United States, Canadian.....	3,626	\$880
" " Not Canadian		
Newfoundland, Not Canadian	3,913	782
Labrador, Not Canadian .....	4,291	944
Total from Quebec.....	11,830	2,606

Value.

11,743  
642  
302  
160  
12,847

## NOVA SCOTIA.

Bush. Value.

United States, foreign.....	4,000	\$ 800
Newfoundland, foreign.....	74,352	15,277
Total from Nova Scotia....	74,352	\$16,027

Value.

42,772  
20,619  
8,252  
7,031  
35,201  
4,608  
19,085  
3,669  
175  
4 272  
360  
525  
932  
47,492

## To What Country.

## NEW BRUNSWICK.

Bush. Value.

United States, foreign.....	10,466	\$1,696
Total from New Brunswick.	10,466	\$1,696

## BRITISH COLUMBIA.

Bush. Value.

United States, foreign.....	166	\$90
Total from British Columbia	\$166	\$90

## PRINCE EDWARD ISLAND.

Bush. Value.

United States, foreign.....	5,500	\$1 150
Newfoundland, foreign.....	11,869	2,897
Total from P. E. Island...	17,369	\$4,047

## DOMINION OF CANADA.

Bush. Value.

United States, Canadian.....	789 599	\$ 82,323
" " foreign.....	61,191	16,261
Newfoundland, foreign.....	86,174	18,906
Labrador, foreign.....	4,291	944
Total from Dominion.....	941,215	\$118,434



# Salt Produced in the United States During the Year 1870.

	Bushels.	Value. Dollars.	Capital. Dollars.	No. Hands Employ'd	Wages Paid. Dollars.	Coal Consumed.		Wood & other Material. Value.
						Tons.	Value.	
In New York.....	4,977,720	\$ 925,709	\$1,584,211	623	\$ 204,226	117,617	\$ 493,059	\$ 496,649
In Michigan.....	3,981,316	1,176,118	1,717,500	858	331,233			410,561
In Ohio.....	2,890,649	773,429	1,085,904	437	161,420	142,392	193,594	159,328
In West Virginia.....	4,633,750	1,507,605	1,631,000	661	290,800	167,998	251,750	433,750
In all the other States..	1,122,670	535,368	543,000	306	159,225	40,359	62,060	158,438
In all the States.....	17,606,105	\$4,918,229	\$6,561,615	2,890	\$1146,910	468,366	\$1,000,463	\$1,658,726

